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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/762,783	01/23/2004	Kamen George Kamenov		6129

7590 08/26/2004  
KAMEN GEORGE KAMENOV  
2470 FULTON ST. # 5  
SAN FRANCISCO, CA 94118

EXAMINER

TRIEU, THAI BA

ART UNIT PAPER NUMBER

3748

DATE MAILED: 08/26/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

<b>Office Action Summary</b>	<b>Application No.</b>	<b>Applicant(s)</b>	
	10/762,783	KAMENOV, KAMEN GEORGE	
	<b>Examiner</b>	<b>Art Unit</b>	
	Thai-Ba Trieu	3748	

**-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --**

**Period for Reply**

**A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.**

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☐ Responsive to communication(s) filed on \_\_\_\_.
- 2a) ☐ This action is **FINAL**.                      2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1-4 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-4 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☒ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 23 January 2004 is/are: a) ☐ accepted or b) ☒ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).  
a) ☐ All    b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- |  |   |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)  | 4) <input type="checkbox"/> Interview Summary (PTO-413)<br>Paper No(s)/Mail Date. ____. |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)                                   | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152)             |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)<br>Paper No(s)/Mail Date ____. | 6) <input type="checkbox"/> Other: ____.  |

## DETAILED ACTION

### *Information Disclosure Statement*

The listing of references in the specification (See Page 2, lines 1 and 13) is not a proper information disclosure statement. 37 CFR 1.98(b) requires a list of all patents, publications, or other information submitted for consideration by the Office, and MPEP § 609 A(1) states, "the list may not be incorporated into the specification but must be submitted in a separate paper." Therefore, unless the references have been cited by the examiner on form PTO-892, they have not been considered.

### *Drawings*

1. The drawings are objected to under 37 CFR 1.83(a). The drawings must show every feature of the invention specified in the claims. Therefore, the ***"external valving means with an appropriate cam shaft"*** (See Claim 1, line 17), and ***"the intake ports being replaced with plurality of injections means, preferably located close to the spark plugs"*** (See Claim 4) must be shown or the feature(s) canceled from the claim(s). No new matter should be entered.

Corrected drawing sheets in compliance with 37 CFR 1.121(d) are required in reply to the Office action to avoid abandonment of the application. Any amended replacement drawing sheet should include all of the figures appearing on the immediate prior version of the sheet, even if only one figure is being amended. The figure or figure number of an amended drawing should not be labeled as "amended." If a drawing figure is to be canceled, the appropriate figure must be removed from the replacement sheet,

and where necessary, the remaining figures must be renumbered and appropriate changes made to the brief description of the several views of the drawings for consistency. Additional replacement sheets may be necessary to show the renumbering of the remaining figures. The replacement sheet(s) should be labeled "Replacement Sheet" in the page header (as per 37 CFR 1.84(c)) so as not to obstruct any portion of the drawing figures. If the changes are not accepted by the examiner, the applicant will be notified and informed of any required corrective action in the next Office action. The objection to the drawings will not be held in abeyance.

2. The drawings are objected to as failing to comply with 37 CFR 1.84(p)(4) because reference character "19" has been used to designate both "**spark plug**" (See Figures 1 and 5-6; Page 6, line 2, and Page 7, lines 7-8) and "**crank**" (See Figure 2, and claim 2) . Corrected drawing sheets in compliance with 37 CFR 1.121(d) are required in reply to the Office action to avoid abandonment of the application. Any amended replacement drawing sheet should include all of the figures appearing on the immediate prior version of the sheet, even if only one figure is being amended. The replacement sheet(s) should be labeled "Replacement Sheet" in the page header (as per 37 CFR 1.84(c)) so as not to obstruct any portion of the drawing figures. If the changes are not accepted by the examiner, the applicant will be notified and informed of any required corrective action in the next Office action. The objection to the drawings will not be held in abeyance.

### ***Specification***

#### **1. IN THE ABSTRACT:**

Since the abstract is too long, applicant is required to submit a substitute abstract to meet the requirement set forth below:

Applicant is reminded of the proper language and format for an abstract of the disclosure.

The abstract should be in narrative form and generally limited to a single paragraph on a separate sheet within **the range of 50 to 150 words**. It is important that the abstract not exceed 150 words in length since the space provided for the abstract on the computer tape used by the printer is limited. The form and legal phraseology often used in patent claims, such as "means" and "said," should be avoided. The abstract should describe the disclosure sufficiently to assist readers in deciding whether there is a need for consulting the full patent text for details.

The language should be clear and concise and should not repeat information given in the title. It should avoid using phrases which can be implied, such as, "The disclosure concerns," "The disclosure defined by this invention," "The disclosure describes," etc.

#### **2. IN THE SPECIFICATION:**

The specification is objected to as failing to provide proper antecedent basis for the claimed subject matter. See 37 CFR 1.75(d)(1) and MPEP § 608.01(o). Correction of the following is required: Specifically:

- In claim 1, "external valving means" (line 17) is required to be incorporated with the specification.

- In claim 2, ***“means for imparting continuous rotation”*** (lines 2-3) and ***“crank”*** (line 3) are required to be incorporated with the specification.

### ***Claim Suggestions***

Claims 1-4 are suggested as following to maintain the consistency of the specification and claims, to correct typo errors and to avoid of lacking antecedent basis in claims.

1. Claim 1 should be replaced by following:

-- A rotatably reciprocating vane internal-combustion engine comprising:

~~[[a water jacketed, double-walled (optional)]]~~ **a** cylindrical casing (1) **having a water jacketed double wall** ~~[[allowing for cooling fluids to pass]]~~ **wherein cooling fluid passes** through it;

~~[[said casing equipped with]]~~ longitudinally extending walls (2 & 3) **being** unitary or affixed to the **cylindrical** casing;

vanes (7 & 8) unitary or affixed to **a power output rotary** shaft (6), said **power output rotary** shaft rotatably alternating in a back and forth fashion and together with the vanes ~~[[referred ]]~~ **referred** to as the swinging piston;

said power output rotary shaft (6) is mounted within the **cylindrical** casing upon ~~[[double-walled (optional) ]]~~ end plates (10 & 11);

sealing strips (9 & 12, ~~optional~~) embodied in grooves and provided between the walls (2 & 3) and the **power output rotary** shaft (6), between the vanes (7 & 8), the **cylindrical** casing (1) and the end plates (10 & 11) respectively;

four working chambers (a b, c and d) formed between the vanes (7 & 8) and the walls (2 & 3) inside the casing change their volume in accordance with the alternating position of the vanes, each of the four chamber rooms experiencing an intake, a compression, an ignition-expanding and finally an exhaust cycle;

four sets of ports (14 & 15) , one set for each chamber, ports (14) for intake of combustible ~~[[fluids]]~~ **fluid** and lubricating oil only and ports (15) for exhaust only, are conveniently located in the cylindrical casing (1) and, or at the end plates (10 & 11), depending upon the desired performance of the engine, having ~~[[, (optional), generally known in the art,]]~~ external valving means with an appropriate cam shaft; **and**

four ignition means (16, 17, 18 & 19), one for each chamber, ignite the compressed fuel at maximum compression, firing sequentially into the appropriate chamber room at the end of the combustion stroke.--

2. Claim 2 should be replaced by following:

-- An internal-combustion engine according to claim 1, having means for imparting continuous rotation from the alternating ~~[[“]]~~power

output ["] shaft (6) to [the] **a uni-directionally rotating** main shaft (22) comprising a crank [(19)] secured to said **power output** shaft, a connecting rod (20) swivably mounted to said crank and to the uni-directionally rotating main shaft (22) through a slot on [the] a flywheel (21), said **connecting** rod pivots back and forth across the vertical line passing through the axis of the ["] power output ["] shaft (6) and [the] **an** axis of the **uni-directionally rotating** main shaft (22); said **connecting** rod being extendable and adjustable in length at point (27); the lower part of said **connecting** rod being rotatably and movably attached to the slot formed on the flywheel (21) and being fixed together with a fastening member via that slot to said flywheel in a predetermined position thus adjusting the length of the stroke of the swinging piston assembly for an optimum performance; said fastening member being comprised of a bolt and a nut coupled to the lower end of the rod and to the slot on the flywheel. --

3. Claim 3 should be replaced by following:

-- An internal combustion engine according to claim 1, wherein as an alternative embodiment the rigid longitudinal vanes (7 & 8) are replaced by articulating vanes (28, 29, 30 & 31); [the] vane segments (29 & 30) in operation move as previously described; [the] articulated vane segments (28 & 31) form a different shaping of the chambers a, b, c and d; said vanes are suitably mounted



for slidable rotation within slide-bearing means (32 & 33); said vanes nutate about the joints (34 & 35) while simultaneously sliding within the bearings (32 & 33); said bearings are rotatable within the casing while allowing vane segments (28 & 31) to slide therethrough.--

### ***Claim Rejections - 35 USC § 112***

The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

Claims 1-4 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention. Specifically:

- In claim 1, line 16, the recitation of “***depending upon the desired performance of the engine***” renders the claim indefinite, since it is not clear that how the engine performance must depend upon the location of intake and exhaust ports. Applicant should clarify the relation of the engine performance and the location of intake and exhaust ports; as well as, identify which performance of the engine be a desired performance.
- In claim 3, the recitation of “***the vane segments in operation move as previously described***” renders the claim indefinite, since it is not clear that applicant wants to reference to which part/claim/specification in order that the operation move of vane segments is considered as to be previously described.

- In claim 4, the recitation of "preferably" renders the claim indefinite, since it is not clear that under which condition of the engine, the injection means is positioned close to the spark plugs, and under which condition of the engine the injection means is positioned far away from to the spark plugs.

***Claim Rejections - 35 USC § 103***

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

***Claims 1 and 4 are rejected under 35 U.S.C. 103(a) as being unpatentable over Barber (patent Number 1,346,805), in view of the admitted prior art of Meuret (Patent Number 4,599,976).***

Barber discloses a rotatably reciprocating vane internal-combustion engine comprising:

a water jacketed, double-walled cylindrical casing (3) allowing for cooling fluid to pass through it (See Figures 2 and 13, Page 2, lines 81-85);

said casing (3) equipped with longitudinally extending walls (4) unitary or affixed to the casing (3) (See Figures 1-5 and 12-13);

vanes (7) unitary or affixed to shaft (8), said shaft rotatably alternating in a back and forth fashion and together with the vanes referred to as the swinging piston (See Figures 6-8);

said power output rotary shaft (8) is mounted within the casing upon double-walled end plates (Not Numbered) (See Figure 2);

four working chambers formed between the vanes (7) and the walls (4) inside the casing (3) change their volume in accordance with the alternating position of the vanes, each of the four chamber rooms experiencing an intake, a compression, an ignition-expanding and finally an exhaust cycle (See Figures 14-18, and Page 1, lines 92-112);

four sets of ports (13,14,15,16, 24, 25) one set for each chamber (See Figures 14-18), ports (24) for intake of combustible fluid and ports (25) for exhaust only, are conveniently located in the cylindrical casing (3) and, or at the end plates (Not Numbered) (See Page 2, lines 57-85);

four ignition means (17), one for each chamber, ignite the compressed fuel at maximum compression, firing sequentially into the appropriate chamber room at the end of the combustion stroke; wherein the intake ports are replaced with plurality of injection means, preferably located close to the spark plugs(See Figures 2, Page 2, lines 50-56).

However, Barber fails to disclose ports for intake of combustible fluid and lubricating oil, seal strips and external valving means with an appropriate cam shaft.

Meuret teaches that it is conventional in the oscillating armature combustion engine art, to utilize ports for intake of combustible fluid and lubricating oil (See Column 4, lines 62-68, Column 5, lines 1-2, Column 6, lines 66-68, and Column 7, lines 1-5), sealing strips (9, 11) embodied in grooves and provided between the walls (Not Numbered) and the shaft (29), between the vanes (5), the casing (2a) and the end

plates respectively; and external valving means (15) with an appropriate cam shaft (16) (See Figures 1 and 3).

It would have been obvious to one having ordinary skill in the art at that time the invention was made, to have utilized ports for intake of combustible fluid and lubricating oil, the seal strips and external valving means with an appropriate cam shaft, as taught by Meuret, to improve performance efficiency of the Barber device, since the use thereof would have reduced friction between the walls and the shaft, and between the casing and the oscillating vanes/pistons.

#### ***Allowable Subject Matter***

Claims **2-3** would be allowable if rewritten to overcome the rejection(s) under 35 U.S.C. 112, 2nd paragraph, set forth in this Office action and to include all of the limitations of the base claim and any intervening claims.

#### ***Conclusion***

The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

- Williams (US Patent Number 1,037,094) discloses an internal combustion engine.
- Woodward (US Patent Number 967,097) discloses an internal combustion engine.
- Carmichael et al. (US Patent Number 1,010,583) disclose gas engine.

- Droese (Patent Number DE 37 25 277 A1) discloses an oscillating armature combustion engine.

- Schmidt (Patent Number DE 31 37 979 A1) discloses a lever piston engine.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Thai-Ba Trieu whose telephone number is (703) 308-6450. The examiner can normally be reached on Monday - Thursday (6:30-5:00).

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Thomas E. Denion can be reached on (703) 308-2623. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

TTB  
August 23, 2004

  
Thai-Ba Trieu  
patent Examiner  
Art Unit 3748